with shattered legs and arms, some with compound fractures, some with penetrating wounds of the abdomen and chest. They made little or no complaint on being picked up, placed in ambulances, and transported.

Thus these men, goaded by shot and shell and the ever-advancing army; for nine days without adequate sleep or food; in constant fear of capture, and finally wounded—thus these men, more dead than alive, came to the hospital: and thus they slept on while their wounds were dressed.

After deep sleep for two or three days, during which they wanted neither food nor drink, they began to be conscious of their surroundings: they asked questions; they experienced pain; they had discomforts and wants. They had returned from the abysmal oblivion of sleep.

That these men had conquered the overwhelming impulse to sleep sufficiently to continue marching and fighting during that nine days' retreat testifies to the dominating power of battle. That a soldier falls asleep during the dressing of severe wounds tells a trenchant story of the intensity of the stimulus that kept him awake.

When They Feel No Pain

THE most striking phenomenon exhibited by soldiers is the absence of pain under the following conditions: (*a*) In the midst of a furious charge the soldier feels no pain if wounded; and sore and bleeding feet are unnoticed. In the overwhelming excitement of battle he may be shot, stabbed, or crushed without feeling pain. (*b*) The blow of a high velocity bullet or projectile unaccompanied by the heat of battle causes no pain on impact, though there may be a burning sensation at the point of entrance, and the soldier may feel as if he had been jarred or struck. Frequently he first learns of his wound from a comrade. (*c*) In the state of complete exhaustion in which loss of sleep is the chief factor pain is quite abolished. (*d*) Under heavy emotion pain is greatly diminished, even prevented.

We can now offer a mechanistic explanation of these exceptions to the general rule that bodily injury causes pain. During the overwhelming activation in a charge, the stimulus of the sight of the enemy is so intense that no other stimulus can obtain possession of the final common path of the brain—the path of action. Pain is inevitably associated with muscular action; therefore if a bullet or bayonet wound is inflicted at the moment when this injury can not obtain possession of the final common path, it can excite no muscular action and consequently no pain. Hunters attacked by wild beasts testify to the fact that the tearing of the flesh by claws and teeth can not dispossess the excessive activation of the brain by the realization of danger. For this reason the teeth and claws of the beast do not cause any adaptive muscular response and therefore there is no pain. In like manner the emotion of fear in the soldier holds possession of the final common path, so that muscular action against local flesh injuries is prevented. Not only in war does emotion overcome pain; so does great anger; so does the exaltation of religious fanatics in their emotional rites.

As for the diminished pain in exhaustion, especially exhaustion in which loss of sleep is an important factor, the following explanation seems adequate: As we have stated already, pain is always associated with muscular action. Therefore if the kinetic system is so completely exhausted that no more muscular action can be excited, pain is impossible. In a state of exhaustion, therefore, unless the injury is sufficient to mobilize the dregs of energy remaining in the kinetic organs, there will be no muscular action and no pain. This explanation is strongly supported by the fact that as soon as exhausted soldiers had slept long enough to restore in some measure the energy of the brain, the adrenals, and the liver, then muscular action, and coincidentally pain, were evoked normally.

Two Striking Examples

A REMARKABLE example of the depression of pain in the presence of other more dominant stimuli is the case of a young British sergeant, who in a severe engagement while standing near a battery had his leg partially cut off by a shell that failed to explode. He felt no pain, merely a jar, and discovered his injury only when his leg failed to support him. He hopped to a near-by stack of grain and lay down behind it. Here he took out his dull one-bladed knife and completed the amputation, feeling no pain in making the division. An ambulance squad started for him, but immediately the enemy fired upon them, killing one. The fire becoming more intense, the sergeant rolled over and over into a near-by ravine. The enemy advanced so fast that in his excitement he struggled up and, forgetting that his leg was gone, threw his weight on the stump. Even then he felt no pain. For several hours he lay there without pain until after the danger had passed and he was removed by the stretcher squad. Then his suffering began.

The fact that pain is an accompaniment of muscular action, and that without some associated muscular action there is no pain, makes it clear that there can be no pain when the system is as exhausted as in the soldiers on their retreat to the Marne. A striking illustration of the absence of pain in the presence of extreme fear and exhaustion is found in an incident related by Dr. Gros, which occurred during the transportation of wounded soldiers who had made the exhausting march from Mons to the Marne.

It was a dark night, and the hospital train filled with the wounded was crossing the river Ourcq. The engineer failed to see that the bridge was broken, and the train plunged into the river beneath, some of the cars remaining on the bridge and some being suspended in mid-air. The patients in the suspended cars, struggling like worms in a bottle, were thrown in heaps against the ends. The engine exploded, the cars were filled with live steam, and many of the wounded were burned to death. The suspended cars could not be righted, and the wounded were dragged out by main force.

Such intensified cruelty could not come even to trapped animals. It could come only through the ingenuity of man—through the machinery of civilization. And yet these men, suffering from fear, excessive marching, fighting, the loss of sleep, and the plunge into darkness, scalded, steamed, grilled, and finally shattered and bleeding—these men felt no pain!

Raising Dogs for Profit

By ALDEN FEARING

NOT long ago I received a letter, typical of many others, which ran somewhat as follows:

I am a woman living in a small country town, and I am anxious to find some method of earning money that will not take me away from home. I am very fond of dogs and have always been successful in rearing the puppies I have owned. Would it be feasible for a woman in my position to go into the business of raising puppies for sale? How should I begin? How much capital would I need? How much space and what equipment? How can I be sure of finding a market? What breed do you recommend?

Perhaps I can best answer all these questions by relating the experiences of a woman who has done this very thing successfully—Mrs. Edith M. Baker of North Hampton, New Hampshire.

Mrs. Baker chose the Old English or bob-tailed sheep-dog, because that breed was particularly attractive to her. It is not one of the most popular breeds in this country, but high prices are obtainable for good specimens, and Mrs. Baker has succeeded in securing customers for her output. In the past few years the breed has become better known here, owing to the appearance of several fine importations and their progeny in the dog shows.

The Old English sheep-dog is an ancient breed of Great Britain. In character he is affectionate and intelligent, seldom becoming bad-tempered, and as a rule a splendid companion for children. In appearance he is one of the showiest of dogs, with his bear-like gait and his immense coat, fairly covering his face. He is a large, powerful dog, and much more active than one would suspect.

Photograph from Mary H. Northend

Brentwood Saucy and Woodland Roughhouser, two famous examples of the sheep-dog—an ancient breed of Great Britain that is becoming popular in the United States.

Having decided upon this breed for her future operations, Mrs. Baker sought for the best breeding stock. This was in 1908. With Mr. Baker she made a trip to England, visiting Mrs. Charter's famous kennels at Brentwood. She became convinced anew that the bob-tail was an ideal country dog, and purchased two of the Brentwood strain. The male was a son of the famous Shepton Hero, and the bitch was a gray beauty called Brentwood Cherry Girl. The pair were brought back to America without great expense, there being no duty on thoroughbred dogs imported for breeding purposes.

Their first and only litter consisted of six pups, of which one likely youngster, Woodland Simon, was kept. The other five were sold on the strength of their pedigree at an average of $50 apiece. Unfortunately, Cherry Girl was soon after run over and killed by an automobile; and as the first dog was not proving to be a good breeder, he was sold.

Mrs. Baker began again, buying a litter of four pups in this country, and importing another pair from England. A daughter of this pair, Woodland Judy, proved to be a splendid mother, being mated to one of the American dogs, Woodland Roughhouser. Mrs. Baker now has half a dozen fine breeding animals.

The bob-tail is a dog of slow development, not maturing fully in size and coat until he is three years old. He may live to be twenty. He is naturally hardy, thriving best out of doors, though he should have a sheltered sleeping-place during winter storms. For the most part, Mrs. Baker has succeeded in keeping her dogs remarkably healthy.

It Pays When You Know How

MRS. BAKER issues the following directions for feeding puppies: One puppy biscuit at seven or eight o'clock; milk, slightly warmed, at ten or eleven o'clock; cereal or shredded wheat with milk at twelve or one o'clock; milk at three or four o'clock; raw meat, ground, with boiled rice, at six or seven o'clock. Gradually drop the milk feedings after four months, and at six months and after give a dog biscuit, or one and a half, for breakfast, a piece of dry bread or a dry bone at noon, and a hearty meal at night of cooked or raw meat with rice or shredded wheat or other cereal, slightly moistened with soup. Salted, well cooked vegetables, such as carrots, cabbage, beans, or spinach, may be added to this mixture. Boiled fish may be substituted for meat occasionally. Always give plenty of water in clean dishes. Never feed poultry or pork.

"For exterminating fleas," she says, "soak ten cents' worth of quassia chips overnight in hot water; sponge the skin and brush the hair with the liquid. Brush the dog every day the wrong way with a bristle or whalebone brush for a good coat."

Mrs. Baker started with one double kennel, but soon found it necessary to build a range of open-air kennels with spacious runs.

"The dog business does pay," says Mrs. Baker, "if one can stand the disappointments and discouragements of the first few years. A well known dog breeder once said that he had to fill a graveyard with dogs before he learned to bring them up. But that is true of almost any enterprise in live stock. I have learned now by experience how to cope successfully with puppy ills, and have not lost a dog or a puppy for two years. I think I could start anew with $600 and make it pay, but most people have to expect to pay something for experience."